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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,417	12/31/2003	Paul Johnson	24NS-129203	4646

7590 08/25/2006

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EXAMINER	
SAINT SURIN, JACQUES M	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,417	JOHNSON ET AL.	
	Examiner	Art Unit	
	Jacques M. Saint-Surin	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/15/06 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the limitations of "rotatably mounting" as described in the specification because Fig. 4 shows pivoting, not rotating. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. Claims 1-3, 5, 11-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable overNusbickel et al. (US Patent 3,616,684) in view of Johnson (US Patent 6332,011).

Regarding claims 1, 11 and 15, Nusbickel discloses a method of inspecting a portion of weld (ultrasonic inspection of Fig. 1), comprising :

rotatably mounting at least one ultrasonic phased array probe (rotatably mounted on said end plates are wheels for engaging the surface of the plate 10, row of transducers 14 is shown inserted through an opening in the upper end of the housing 16 and coupled to a supply of liquid 52, e.g. water contained in said housing, see: col. 2, lines 66-69 and Fig. 1) within a probe housing (16) containing a liquid (52) therein, each transducer having a plurality of elements (transducer 14 inherently includes plurality of

elements), the at least one ultrasonic phased array probe (14) rotatable within the probe housing (16);

attaching the housing (16) adjacent an outer surface (conduit 46) of the portion of the weld (10) such that the liquid (52) is adjacent the outer surface of the portion of the weld (10), and scanning the weld (10) with the at least one ultrasonic phased array probe (14). However, Nusbickel et al. does not specifically disclose or suggest an scanning the weld with the at least one ultrasonic phased array probe. Johnson discloses ultrasonic beam 100 is focused so that a focal point 108 of beam 100 aligns with upper fusion line 104 of weld 70 and outer surface 92 of shroud head flange 54, see: col. 4, lines 48-50). It would have been obvious to one having ordinary skill in the art at the time of the invention to employ in Nusbickel the scanning of Johnson because it provides a phased array ultrasonic probe on a top surface of the shroud head flange, emitting an ultrasonic beam from the ultrasonic probe, electronically steering the ultrasonic beam to scan the weld joining the shroud head flange and the upper shroud section with the beam moving from an outer surface of the shroud head flange to an inner surface of the shroud head flange, and acquiring scan data over the length of the scan thereby, providing a reliable inspection in an efficient manner.

Regarding claims 11 and 15, they are similar in scope with claim 1 and therefore, they are rejected for the reasons set forth for that claim.

Regarding claim 2, Nusbickel does not specifically disclose or suggest the weld (70) is between at least two similar materials. Johnson discloses (shroud head flange and upper shroud section) see: col. 1, lines 65-66. It would have been obvious to one

having ordinary skill in the art at the time of the invention to utilize in Nusbickel the techniques of Johnson because one of the ordinary skill in the art would be motivated to recognize the advantages and desirability to use weld as testing material.

Regarding claim 3, Nusbickel does not disclose the weld is between two dissimilar materials. Johnson discloses H1 weld 70 (upper shroud section and upper heat affected zone), see: col. 1, lines 66-67. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Nusbickel the techniques of Johnson because one of the ordinary skill in the art would be motivated to recognize the advantages and desirability to use weld as testing material.

Regarding claim 5, Nusbickel in view of Johnson discloses disposed in front of and parallel to the housing 16 is a conduit 46 which is supplied with a coupling liquid, e.g. water, by a reservoir such as a storage tank mounted on the carriage 36, see: col. 2, lines 54-65.

Regarding claim 12, Nusbickel does not disclose the phased array probe includes at least one transducer configured to actuate a frequency, a pitch and an aperture. Johnson discloses referring to FIGS. 3 and 4, phased array probe contains one linear array transducer having a plurality of elements 98 which emits an ultrasonic sound beam 100. The basic parameters of phased array probe 96 are defined as frequency, aperture A, element size X, element width Y, pitch or element spacing P, and number of elements 98, see: col. 3, lines 58-64.Furthermore, Nusbickel in view of Johnson discloses emitting an ultrasonic sound beam from the ultrasonic probe, electronically steering the ultrasonic sound beam to scan the weld joining the shroud

head flange and the upper shroud section with the beam moving from an outer surface of the shroud to an inner surface of the shroud, and acquiring scan data over a length of the scan (see: col. 2, lines 1-7 of Johnson). Fig. 4 shows at least two pipes 70 and 76.

6. Claims 4, 7-10, 13-14, 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Johnson (US Patent 6332,011) and further in view of Sproule (US Patent 3,938,372).

Regarding claims 4, 7-10, 14, 16 and 18-20, Nusbickel in view of Johnson does not disclose wherein the scanning weld with the at least one ultrasonic phased array probe comprises electrically steering at least one of the elements such that an ultrasonic beam is emitted at a plurality of steering angles. Sproule discloses in the case of immersion testing, which includes angle-beam testing, the word is applied only to the transducer and the associated housing, the changes in angle in the test piece being carried out by changing the angle of the probe in relation to the surface of the test piece (see: col. 2, lines 15-20). Sproule further discloses a continuously variable beam angle is determined by the angular setting of the transducer within the liquid-filled cell, see: col. 2, lines 26-28. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in the combination of Nusbickel and Johnson the techniques of Sproule because it provides a liquid filled cell having a window for application to the test piece and the transducer is pivotable to provide variable angle of wave incidence at the window and an external scale, calibrated in angle of refraction of resultant waves in the test piece, permits of pivoting the transducer for the

corresponding angle of incidence by way of a mechanical linkage thereby realizing a complete and reliable inspection of the weld in an efficient manner..

7. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Johnson (US Patent 6332,011) and further in view of Watts (US Patent 3,202,218).

The difference between these claims and Nusbickel in view of Johnson is the recitation of releasably attaching the housing such that a water-tight seal exists between the housing and the surface of the portion of the weld, wherein the seal is an elastometer. Watts discloses a sealing ring (not shown) between the rings 54 and the conduit makes a water-tight seal, see: col. 3, lines31-33. Note that the water-tight seal is equivalent to an elastomer. It would have been obvious to one of the ordinary skill in the art at the time of the invention to utilize in Nusbickel in view of Johnson the sealing of Watts because it would provide any suitable means for releasably securing the housing to the base thereby providing an effective welding connection between the housing and the surface of the weld.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Mondays to Fridays between 10:30 A.M and 800 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jacques M. Saint-Surin
July 08, 2006

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